

## REMARKS

Favorable reconsideration of this application is respectfully requested in view of the following remarks.

Before turning to the claims, a brief discussion of a butterfly valve according to disclosed embodiments is provided. The butterfly valve includes a top flange 2 for mounting an operating unit 16 thereon. The top flange 2 is formed with a plurality of ellipsoidal cutouts 12 extending from the outer peripheral edge of the top flange 2 toward the center thereof so that connecting bolts 17 can be moved in the plurality of cutouts 12 in the radial direction of the top flange 2. Accordingly, the pitch circle diameter of the connecting bolts 17 for connecting the operating unit 16 and the top flange 2 to each other can be changed to various pitch diameters corresponding to operating units of various size and types, without using a spacer or the like. Of course, the claimed invention is not limited to the disclosed embodiments.

Turning now to the claims, Claim 1 is rejected as being unpatentable over Japanese Utility Model Publication No. 3052091, hereinafter Asahi.

Claim 1 recites a butterfly valve including an integrally formed valve housing having a substantially cylindrical flow passage formed therein, a disc-shaped valve element arranged in the flow passage so as to be rotatable therein, a stem extending from the valve element to the outside of the valve housing and supported by the valve housing so as to be rotatable, and an operating unit for rotating the stem. Claim 1 also recites that the butterfly valve is adapted so that the flow passage is opened and closed by rotating the stem to thereby rotate the valve element in the flow passage. The claim goes on to recite that the butterfly valve further includes a

top flange formed integrally with the valve housing for mounting the operating unit thereon by connecting bolts, the top flange being formed with a plurality of cutouts extending from the outer peripheral edge of the top flange toward the center thereof so that the connecting bolts can be moved in the plurality of cutouts in a radial direction of the top flange to adapt a pitch circle diameter of the connecting bolts to various pitch circle diameters.

Asahi discloses an automatic plastic valve wherein the valve body is firmly connected to the operating unit dedicated for that valve body by means of engaging pins so as to prevent malfunction. Each cutout slot provided on the top flange of valve body has a specific concave shape corresponding to the engaging pin in horizontal cross section so that the engaging pin is correctly fitted into the cutout slot.

Specifically, paragraph [0014] of Asahi states that "outer peripheral surface 11b of flange 11 of engaging pin 3 has a curved surface so as to be flush with the outer peripheral surface of mounting portion 6 when flange 11 is fitted into engaging groove 14. This makes it possible to closely contact a heat-shrinkable tube 24, described later, with the outer peripheral surface of mounting portion 6 to thereby provide a good seal." Moreover, paragraph [0018] of Asahi states that "Fig. 6 shows a state wherein band-shaped heat-shrinkable tube 24 is attached to outer peripheral surfaces of top flange 8 and mounting portion 6 which are connected to each other with engaging pins 3. This makes it possible to eliminate a possibility that engaging pins 3 fixing operating unit 1 to valve body 2 falls off due to vibration, etc., and further enhance safety of the automatic valve." Accordingly, since the outer peripheral surface of the flange of the engaging pins

should be flush with the outer surfaces of the top flange and mounting portion when the engaging pins are fitted into the engaging grooves of the mounting portion and the cutout slot of the top flange, the cutout slot has a shape complementary to the engaging pin without any play and the shape of the cutout in the horizontal cross section has to be a specific concave shape rather than, for example, ellipsoidal.

The "Response to Arguments" section of the Official Action states that "Asahi discloses the placement of a plurality of radial cutout slots (13) in the mounting flange to a rotatable valve body. Although Asahi does not expressly disclose using the plurality of radial cutout slots with different operating units having different pitch circle diameters, the Asahi reference discloses a structure having a plurality of radial cutout slots wherein that structure can be used to adapt the pitch circle diameter so that the valve body can be used with different operating units." However, as described above, the radial cutout slot of the top flange is specifically designed for the particular operating unit having the particular pitch circle diameter and cannot be used for different operating units having different pitch circle diameters. Further, since the outer peripheral surface of the flange of the engaging pins should be flush with the outer surfaces of the top flange and mounting portion when the engaging pins are fitted into the engaging grooves of the mounting portion and the cutout slots of the top flange, as described above, the cutout slots of Asahi do not allow the engaging pins to move in the radial direction within the cutout slots.

Accordingly, Asahi does not disclose a butterfly valve including a top flange formed integrally with the valve housing for mounting an operating unit thereon by

connecting bolts, the top flange being formed with a plurality of cutouts extending from the outer peripheral edge of the top flange toward the center thereof so that the connecting bolts can be moved in the plurality of cutouts in a radial direction of the top flange to adapt a pitch circle diameter of the connecting bolts to various pitch circle diameters, in combination with the other elements recited in Claim 1.

Claim 1 is therefore allowable over Asahi, and withdrawal of the rejection of Claim 1 as being unpatentable over Asahi is respectfully requested.

Claim 1 is also rejected as being unpatentable over Asahi in view of U.S. Patent No. 5,564,461, hereinafter Raymond.

Asahi is allowable over Claim 1 for the reasons discussed above. Moreover, Raymond does not cure the above-noted deficiencies in Asahi. Claim 1 is therefore allowable over Asahi in view of Raymond, and withdrawal of the rejection of Claim 1 as being unpatentable over Asahi in view of Raymond is respectfully requested.

Claim 1 is also rejected as being unpatentable over Asahi in view of U.S. Patent No. 4,815,693, hereinafter James.

Asahi is allowable over Claim 1 for the reasons discussed above. Moreover, James does not cure the above-noted deficiencies in Asahi. Claim 1 is therefore allowable over Asahi in view of James, and withdrawal of the rejection of Claim 1 as being unpatentable over Asahi in view of James is respectfully requested.

The dependent claims are allowable at least by virtue of their dependence from allowable independent Claim 1. Thus, a detailed discussion of the additional distinguishing features recited in the dependent claims is not set forth at this time.

Early and favorable action with respect to this application is respectfully requested.

Should any questions arise in connection with this application or should the Examiner believe that a telephone conference with the undersigned would be helpful in resolving any remaining issues pertaining to this application, the undersigned respectfully requests that he be contacted at the number indicated below.

Respectfully submitted,

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